The Invention Claimed Is:

1. Circuitry for maintaining data integrity across data links, said circuitry comprising:

an encoding circuit for dividing a data frame into a plurality of sub-packets, inserting a plurality of sequential identification packets within said data frame in between said plurality of sub-packets, and for transmitting said data frame with said inserted plurality of identification packets; and

a decoding circuit for receiving said transmitted data frame, for identifying each of said plurality of sequential identification packets, and for storing each of said plurality of sub-packets following each of said plurality of sequential identification packets, wherein each of said plurality of sub-packets is stored in the sequence of said preceding sequential identification packet.

2. The circuitry of claim 1, wherein:

said encoding circuit comprises forward error correction encoding circuitry for encoding said data frame; and

said decoding circuit comprises forward error correction decoding circuitry for decoding said stored sub-packets.

3. The circuitry of claim 1, wherein said dividing comprises dividing said data frame into a plurality of equally sized sub-packets.

4. The circuitry of claim 1, wherein said decoding circuit further comprises a counter circuit for counting the amount of time between each of said

identified plurality of sequential identification packets.

5. The circuitry of claim 1, wherein said decoding circuit further comprises a counter circuit for counting the amount of data said decoding circuit receives between each of said identified plurality of sequential identification packets.

6. Circuitry for maintaining data integrity across data links, said circuitry comprising:

an error correction encoding circuit for converting a data stream into at least one error correction encoded data frame;

a dividing circuit for dividing said at least one error correction encoded data frame into a plurality of data packets and for inserting a plurality of identification packets into said divided error correction encoded data frame, each of said identification packets associated with one of said plurality of data packets, and each said identification packets storing information on the position of said associated data packet within said error correction encoded data frame;

a reconstructing circuit for detecting each of said plurality of identification packets within said plurality of data packets in said divided error correction encoded data frame and for reconstructing said at least one error correction encoded data frame, said reconstructing comprising inserting each of said plurality of data packets into said reconstructed data frame according to said position information stored in each of said associated identification packets; and

an error correction decoding circuit for decoding said reconstructed data frame.

7. The circuitry of claim 6, said error correction encoding circuit comprising Reed-Solomon encoding circuitry.

8. The circuitry of claim 6, said error correction encoding circuit comprising data interleaving circuitry.

9. The circuitry of claim 6, further comprising a clock data recovery circuit for deriving a reference clock signal from said data stream.

10. The circuitry of claim 6, wherein said dividing circuit divides said at least one error correction encoded data frame into a plurality of data packets of a pre-determined size.

11. Circuitry for maintaining data integrity across data links, said circuitry comprising:

an error correction encoding circuit for converting a data stream into at least one error correction encoded data frame;

a dividing circuit for dividing said at least one error correction encoded data frame into a plurality of data packets and for inserting a plurality of identification packets into said divided error correction encoded data frame, each of said identification packets associated with one of said plurality of data packets, and each said identification packets storing information on the position of said associated data packet within said error correction encoded data frame; and

a transmitter circuit for transmitting said divided error correction encoded data frame comprising said plurality of data packets and said plurality of associated identification packets across a data link.

12. The circuitry of claim 11, wherein said transmitter circuit further comprises a serializer circuit for serially transmitting said divided error correction encoded data frame across said data link.

13. The circuitry of claim 11, wherein said transmitter circuit further comprises a circuit for encoding a reference clock signal within said divided error correction encoded data frame.

14. Circuitry for maintaining data integrity across data links, said circuitry comprising:

a receiver circuit operable to receive at least one data frame divided into a plurality of data packets and further comprising a plurality of identification packets, each of said plurality of identification packets associated with one of said plurality of data packets and storing information on the position of said associated data packet within said data frame, said receiver circuitry comprising:

a reconstructing circuit for detecting said identification packets within said plurality of data packets and for reconstructing said at least one data frame, said reconstructing comprising inserting each of said data packets into said reconstructed data frame according to said position location information stored in each of said associated identification packets; and

an error correction decoding circuit for decoding said reconstructed data frame.

15. The circuitry of claim 14, wherein said receiver circuit further comprises a de-serializer circuit for serially receiving said data frame across said data link.

16. The circuitry of claim 14, wherein said receiver circuit further comprises a circuit for receiving a reference clock signal encoded within said data frame.

17. A method for maintaining data integrity across data links, said method comprising:

dividing a data frame into a plurality of sub-packets;

inserting a plurality of sequential identification packets within said data frame in between said plurality of sub-packets;

transmitting said data frame with said inserted plurality of sequential identification packets;

receiving said transmitted data frame;

identifying said each of said plurality of sequential identification packets within said received data frame;

storing each of said plurality of sub-packets following each of said sequential identification packets, wherein each of said plurality of sub-packets is stored in the sequence of said preceding sequential identification packet.

18. The method of claim 17, further comprising:

encoding said data frame with a forward error correction algorithm; and

decoding said stored sub-packets with said forward error correction algorithm.

19. The method of claim 17, wherein said dividing comprises dividing said data frame into a plurality of equally sized sub-packets.

20. The method of claim 17, said method further comprising counting the amount of time between identifying each of said plurality of sequential identification packets.

21. The method of claim 17, said method further comprising counting the amount of data received between identifying each of said plurality of sequential identification packets.

22. A method for maintaining data integrity across data links, said method comprising:

encoding data according to an error correction encoding algorithm into at least one error correction encoded data frame;

dividing said at least one error correction encoded data frame into a plurality of data packets;

inserting a plurality of identification packets into said divided error correction encoded data frame, each of said plurality of identification packets associated with one of said plurality of said data packets, and each of said plurality of identification packets storing information on the position of said associated data packets within said error correction encoded data frame;

transmitting said divided error correction encoded data frame comprising said plurality of data packets and said plurality of inserted identification packets;

receiving said transmission of said error correction encoded data frame comprising said plurality of data packets and said plurality of inserted identification packets;

detecting each of said plurality inserted identification packets;

storing as at least one data frame, each of said plurality of received data packets associated with each of said plurality of detected identification packets according to said position information stored in each of said associated identification packets; and

decoding said stored data according to a forward error correction decoding algorithm.

23. The method of claim 22, wherein said encoding comprises Reed-Solomon encoding.

24. The method of claim 22, wherein said encoding comprises data interleaving.

25. The method of claim 22, further comprising deriving a reference clock signal from said data stream.

26. The method of claim 22, wherein said dividing comprises dividing said at least one error correction encoded data frame into a plurality of data packets of a pre-determined size.

27. A method for maintaining data integrity across data links, said method comprising:

encoding a data stream into at least one encoded data frame;

dividing said at least one encoded data frame into a plurality of data packets;

inserting a plurality of identification packets into said encoded data frame, each of said plurality of identification packets associated with one of said plurality of data packets, and each of said plurality of identification packets storing information on the position of said associated data packets within said encoded data frame; and

transmitting said divided encoded data frame comprising said plurality of data packets and said plurality of inserted identification packets.

28. The method of claim 27, wherein said transmitting further comprises serially transmitting said divided encoded data frame across a data link.

29. The method of claim 27, wherein said transmitting further comprises encoding a reference clock signal within said divided encoded data frame.

30. A method for maintaining data integrity across data links, said method comprising:

receiving at least one encoded data frame divided into a plurality of data packets and further comprising a plurality of identification packets, each of said plurality of identification packets associated with one of said plurality of data packets and storing information on the location of said

data packet within said encoded data frame, wherein said receiving comprises:

detecting said identification packets within said plurality of data packets;

reconstructing said at least one error correction encoded data frame, said reconstructing comprising inserting each of said data packets in said reconstructed data frame according to said location information stored in each of said associated identification packets; and

decoding said reconstructed data frame.

31. The method of claim 30, wherein said receiving further comprises de-serializing said received divided encoded data frame.

32. The method of claim 30, wherein said receiving further comprises receiving a reference clock signal encoded within said divided encoded data frame.